THAT CLAIMED IS:

1. An apparatus to prevent leakage of fluid in a fluid-cooled power generator, the apparatus comprising:

a housing;

a current bus assembly positioned outside the housing;

a power generator having a rotor and stator contained within the housing and electrically connected to the current bus assembly;

a high-current conductor electrically connected to and extending from the stator of the power generator;

a sleeve positioned to substantially surround the high-current conductor and spaced apart therefrom to thereby define a fluid channel bounded by a portion of the outer surface of the high-current conductor and a portion of the inner surface of the sleeve; and

a protected seal connected to an end portion of the high-current conductor and positioned adjacent the sleeve to prevent leakage of fluid from the fluid channel, the protected seal comprising:

a seal body positioned within the fluid channel between the high-current conductor and the sleeve to thereby define an end boundary of the fluid channel, the seal body having a first surface portion connected to an outer surface portion of the high-current conductor and a second surface portion extending adjacent an inner surface portion of the sleeve to permit the protected seal to readily move relative to the sleeve,

an abrasion abatement layer disposed on a portion of the second surface of the seal body to permit the protected seal to readily move relative to

the sleeve without abrading the surface of the seal body when the seal body contacts the inner surface portion of the sleeve, and

at least one sealing gasket positioned on the second surface portion of the seal body to contact the inner surface portion of the sleeve, the at least one sealing gasket formed of a compressible and pliable material so that the at least one sealing gasket expands to prevent the opening of gaps between the seal and the inner surface portion of the sleeve when the seal moves away from the sleeve and contracts when the seal moves toward the sleeve to thereby prevent leakage of fluid when the protected seal moves relative to the sleeve.

2. An apparatus as defined in Claim 1, wherein the abrasion abatement layer comprises a soft metallic layer formed on the second surface portion of the seal body to thereby permit the protected seal to readily move relative to the sleeve without abrading the surface of the seal body when the seal body contacts the inner surface portion of the sleeve.

3. An apparatus as defined in Claim 1, wherein the seal body of the protected seal is formed of a material having a thermal expansion coefficient substantially equal to that of the material from which the high-current conductor is formed such that the effects of thermally induced axial expansion in both the protected seal and the high-current conductor are substantially identical.

4. An apparatus as defined in Claim 3, wherein the sleeve is formed of an insulating material and has at least one sealing gasket gland formed in the inner surface

thereof such that the sealing gasket positioned therein is substantially insulated from seal-degrading electrical current.

5. An apparatus as defined in Claim 4, wherein the sliding seal further comprises a flange extending outwardly from an end of the seal body in a substantially radial direction relative to the seal body and connected to the seal body to provide a conductive path from the high-current conductor to the current bus assembly.

6. An apparatus as defined in Claim 3, wherein the protected seal further comprises at least one sealing gasket gland formed in the second surface of the seal body, and wherein the at least one sealing gasket is positioned in the at least one sealing gasket gland.

7. An apparatus as defined in Claim 6, wherein the protected seal further comprises a flange spaced apart from the seal body and contacting the high-current conductor to provide a conductive path from the high-current conductor to the current bus assembly.

8. An apparatus as defined in Claim 7, further comprising an insulating gasket positioned between the seal body and the spaced-apart flange to inhibit electrical current along the second surface portion of the seal body such that the sealing gasket gland and sealing gasket positioned therein are substantially insulated from seal-degrading electrical current.

9. A protected seal adapted to be positioned on an end portion of a conductor and adjacent an insulating

surface spaced apart from the conductor to thereby define a fluid channel bounded by a portion of the outer surface of the conductor and the insulating surface, the protected seal being positioned to prevent fluid leakage from the fluid channel when movingly contacting the insulating surface, the protected seal comprising:

a seal body adapted to have a first surface portion connected to the conductor and a second surface portion extending adjacent the insulating surface to permit the protected seal to readily move relative to the insulating surface; and

at least one insulated sealing gasket adapted to be positioned on the second surface portion of the seal body to contact the insulating surface and formed of a pliable and compressible material to thereby expand to prevent the opening of gaps between the seal and the insulating surface when the seal moves away from the insulating surface and contract when the seal moves toward the insulating surface.

10. A protected seal as defined in Claim 9, wherein the at least one sealing gasket is adapted to fit at least partially within a sealing gasket gland formed in the insulating surface, the insulating surface being formed of an insulating material to thereby substantially insulate the sealing gasket gland and sealing gasket positioned therein from electrical current.

11. A protected seal as defined in Claim 10, wherein the protected seal further comprises a flange extending outwardly from an end of the seal body in a substantially radial direction relative to the seal body and connected

to the seal body to provide a conductive path from the conductor to a bus assembly.

12. A protected seal as defined in Claim 9, wherein the protected seal further comprises at least one sealing gasket gland formed in the second surface of the seal body and wherein the at least one sealing gasket is at least partially positioned therein and formed of a pliable and compressible material to thereby expand to prevent the opening of gaps between the seal and the insulating surface when the seal moves away from the insulating surface and contract when the seal moves toward the insulating surface.

13. A protected seal as defined in Claim 12, wherein the protected seal further comprises a flange spaced apart from the seal body and contacting the conductor to provide a conductive path from the conductor to the bus assembly.

14. A protected seal as defined in Claim 13, wherein the protected seal further comprises an insulating gasket positioned between the seal body and spaced-apart flange to inhibit electrical current along the second surface portion of the seal body such that the sealing gasket gland and sealing gasket positioned therein are substantially insulated from electrical current.

15. A protected seal as defined in Claim 9, wherein the seal body is formed of a material having a thermal expansion coefficient substantially equal to that of the material from which the conductor is formed such that the effects of thermally induced expansion in both the

protected seal and the conductor are substantially identical.

16. A method for preventing leakage of fluid in a fluid-cooled power generator, the method comprising:

Positioning a seal to slidably contact an inner surface of a fluid channel positioned adjacent a high-current conductor to thereby permit the seal to slidably move relative to the fluid channel in response to thermal expansion effects of the high-current conductor, vibratory movements of the fluid channel relative to the high-current conductor, and pressure exerted by fluid within the fluid channel such that the fluid is maintained within the fluid channel; and

reducing seal- degrading electrical current flow.

17. A method as defined in Claim 16 further comprising expanding a portion of the seal contacting the inner surface the fluid channel to prevent the opening of gaps between the seal and the inner surface of the fluid channel when the fluid channel moves away from the high-current conductor to thereby prevent leakage of fluid when the seal moves relative to the fluid channel in response to thermal expansion effects of the high-current conductor, vibratory movements of the fluid channel relative to the high-current conductor, and pressure exerted by fluid within the fluid channel; and

contracting the portion of the seal contacting the inner surface the fluid channel in response to the fluid channel moving closer to the high-current conductor to thereby prevent leakage of fluid when the seal moves relative to the fluid channel in response to thermal expansion effects of the high-current conductor, vibratory

movements of the fluid channel relative to the high-current conductor, and pressure exerted by fluid within the fluid channel.